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PATENT APPLICATION

IN THE U.S. PATENT AND TRADEMARK OFFICE

February 17, 2009

Applicants: Yoshio KAJIYA et al

For: METHOD OF PRODUCING CATHODE MATERIAL
FOR LITHIUM SECONDARY CELL

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Commissioner for Patents
P.O. Box 1450
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REPLY BRIEF UNDER 37 CFR 41.41


Sir:

This Reply Brief is filed pursuant to the provisions of 37 CFR 41.41 and is directed to points of argument made by the Examiner in the Examiner's Answer.

(Please see the following pages.)

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on February 17, 2009.



Terryence F. Chapman

In the Examiner's Answer, the Examiner states notwithstanding the fact that the Fujino et al reference fails to teach firing the final mixture obtained in the present claims, Fujino et al teaches the steps required in the present claims, just in a different order. Appellants respectfully disagree.

The present invention is based on the discovery that during the doping of a cathode material for a lithium secondary cell, when a compound of a doping element is first precipitated and bonded on the surface of a compound of a metal, as the major component of the cathode material for a lithium secondary cell, in powdery form, by the use of a chemical method and, subsequently, the compound of the metal having the doping element deposited thereon is mixed with a lithium compound and subsequently fired, a cathode material is produced which gives the lithium secondary cell excellent initial capacity, cycle characteristics and safety. As such, the first step in the present invention requires the precipitation of a solution from an alkaline solution, a carbonate solution or a hydrogen carbonate solution, with the solution having an oxide or carbamate of a metal suspended therein, the dripping of an aqueous solution of a salt of another element into the solution to precipitate and bond a compound of the other element on the oxide or carbonate of the metal, the mixing of the oxide or carbonate of the metal with the compound of the other element precipitated and bonded thereon with a lithium compound to form a mixture and then the firing of the mixture.

In contrast to the present invention, Fujino et al makes a cobalt-coated lithium manganese complex oxide by oxidizing lithium manganese complex oxide particles dispersed in an aqueous alkali solution and a cobalt compound at a temperature of from 20-100°C to epitaxially grow cobalt oxide on the lithium manganese complex oxide, collecting the resulting oxide after filtration washing and drying. The cobalt oxide is epitaxially grown on the surface of a lithium manganese

complex oxide which already has been prepared. Clearly the steps required in the presently claimed invention are not even shown by Fujino et al let alone shown in a different order. In the presently claimed invention, different reaction products are prepared along each step with the final reaction product being fired. As such, Appellants respectfully disagree with the Examiner's position that Fujino et al shows the presently claimed process with just the process steps in a different order.

The secondary references cited by the Examiner also do not teach the claimed method steps or provide the motivation to one of ordinary skill in the art to modify the disclosure of Fujino et al in a manner that would yield the presently claimed invention. As such, Appellants respectfully submit that the patentability of the presently claimed invention over the references cited by the Examiner has been clearly established. Reversal of the Examiner is respectfully solicited.

Respectfully submitted,


Terryence F. Chapman

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